

REMARKS

Applicants have reviewed the Office Action dated March 27, 2008, and the references cited therein. Previously pending claims 1-12 stand rejected and the drawings are objected to. Applicants have addressed the drawing objections in the remarks, but do not believe that amendments to the drawings are warranted. Applicants have also amended the claims to address the claim objections/rejections.

Applicants request favorable reconsideration of the Office Action's grounds for rejection in view of Applicants' amendments to the previously pending claims and the remarks provided herein below. Please charge any fee deficiencies to Deposit Account No. 12-1216.

Objections to Drawings

Applicants' drawings are objected to on three grounds: (1) 37 C.F.R. 1.84(h)(5) because Fig. 1 "show(s) modified forms of construction in the same view", (2) 37 C.F.R. 1.84(p)(4) because in Fig. 1, "reference character '4' has been used to designate both yoke and frame", and (3) 37 C.F.R. 1.84(p)(5) because reference character 12 was "not mentioned in the description" of Fig. 2. Applicants traverse the grounds for each rejection and address the specific rejections in the order they arise in the Office Action.

Objection to Fig. 1 - Modified Forms

Applicants traverse the "modified forms" objection to FIG. 1 in Section 1 of the Office Action. In particular, all four views are of a same, single embodiment. The top middle view of FIG. 1 depicts the apparatus in a cross-sectional view (dividing the apparatus along its axis of symmetry with regard to its cylinders 1 and 3). The view on the top left of FIG. 1 corresponds to a view of the apparatus from the side opposite the rollers. The force sensor 6 is partially obscured by the bearing 5 in this view (which is clear when viewed in the context of the top middle view which presents the apparatus' side cross-sectional view). The views in FIG. 1 represent four distinct perspectives of the same apparatus.

Objection to Fig. 1 - Reference Character "4"

Applicants traverse the objection to the use of a single number to reference the yoke 4. The referenced yoke element is a single element shaped in a "U" arrangement where the base is connected to the bearing 5 and the arms hold the cylinder 3. The reference number 4 thus references a single physical element of the apparatus and correction to FIG. 1 is not needed.

Objection to Fig. 2 - Reference Character "12"

Applicants traverse the objection to Fig. 2 because reference character "12" is mentioned in Applicants' specification. See, paragraph [0023] of the published version (US 2007/0028680 A1) of the present application.

Objections to the Claims (informalities)

Applicants have amended claim 9 to address the identified informality of the previously recited "cylinder." Applicants have deleted "respectively" from each of claims 10, 11 and 12.

Regarding the objection to claim 9, "cylinder" has been changed to "cylinders" in claim 9, line 2. In accordance with the Office Action's objection to **claims 11 and 12**, the word "respectively" has been deleted from the last line of claims 11 and 12, as well as claim 10 for consistency.

Rejection of Claims 1-12 Under Section 112

Applicants have amended claims 1, 8 (to reference claim 6) and 10 to address the identified indefiniteness issues raised by the Office Action.

The Rejection of Claims 1, 2, 4 and 5 as Obvious Over Kumar U.S. Pat. No. 5,388,442 (Kumar)

Applicants traverse the rejection, in section 9 of the Office Action, of claims 1, 2, 4, and 5 as being obvious over Kumar since Kumar, in combination with unspecified prior art cited in the Office Action, would not render an apparatus including each and every recited element of these claims. Thus, the Office Action has not presented a *prima facie* case of obviousness with regard to any of the claims.

A. Rejection of Claim 1

Applicants traverse the obviousness rejection of independent claim 1 because Kumar does not disclose "the yoke is connected with the frame via a connecting element pivotable about at least two mutually non-parallel axes about a center and that the force measuring sensor is formed by a force sensor which is connected with the connecting element." Applicants have amended claim 1 to replace the term "shafts" by the more appropriate translated term "axes." The original Dutch Application from which the present application was translated (and claims priority) recited the term "assen" which means "axes". However, during the translation of the priority document, the term "shafts" was used. Applicants also note that the term "axes" is consistent with the disclosed embodiment wherein a bearing 5 is identified more particularly as a "ball joint" which enables the yoke to pivot on two non-parallel axes in relation to the bearing 5 (ball joint) – sideways and up-and-down. See, FIG. 1 and paragraph [0018] of Applicants' published application. Applicants also note that correction of inaccurate translations, if supported by the original priority document, is proper.

In view of the above clarification, Applicants' invention is directed to an apparatus including a second cylinder held by a yoke that is, in turn, connected to a frame containing a force measuring device. According to claim 1's characterizing clause, the connection between the yoke and the frame is achieved by a connecting element (e.g., the ball joint/bearing 5) that is pivotable about at least two mutually non-parallel axes.

Kumar neither discloses nor suggests the recited "pivotable about at least two mutually non-parallel axes." Instead Kumar emphasizes (see, col. 4, lines 12-14) the importance of alignment achieved though movement restricted on a *single* axis. Such alignment is initially achieved by using a compound shaft (col. 4, lines 17-20 and FIG. 4) in Kumar. Kumar furthermore discloses the shaft parts are locked in place before use. Contrary to Applicants' claimed connecting element which supports pivotable movement about two mutually non-parallel axes about a center (e.g. ball of a ball joint), Kumar discloses locking the shafts in place to prevent their movement. In Kumar a cantilever carriage 18 allows movement of the upper

cylinder – a movement restricted to a *single axis*. See, Kumar at col. 5, lines 9-17 and FIG. 8. For at least this reason, Kumar does not render the claimed invention obvious.

Furthermore, Applicants traverse the obviousness rejection of independent claim 1 because Kumar does not disclose at least the following additional two elements: (1) "a second cylinder which is included in a movably arranged yoke" and (2) "a force measuring sensor which converts the force that the yoke and the frame exert upon each other into a corresponding measuring signal."

With respect to element (1) above, Kumar's "test stand" does not disclose a movable yoke that includes a second cylinder. Applicants' "yoke" is distinguished from Kumar's "shaft." A yoke, as understood by those skilled in the art in the context of Applicants' disclosed illustrative embodiment, is a clamp-like object that couples machine parts. Applicants' paragraph [0018] notes that the yoke 5 couples the two cylinders. Kumar's shaft does not provide this coupling function.

With respect to element (2) above, Kumar does not disclose "a force measuring sensor which converts the force *that the yoke and the frame exert upon each other* into a corresponding measuring signal." As the Office Action notes, "Kumar et al. does not specifically discloses that the load converts the force that the yoke and the frame exert upon each other." The Office Action instead asserts that Kumar's disclosure of a load cell that converts the force between yoke and a cantilevered beam (see, Kumar, col. 4, ll. 62-68 and col. 5, ll. 1-8) renders Applicants' claimed force sensing arrangement obvious. However, the cited portion of Kumar does not even disclose a "measuring signal." Rather the cited section concerns how the load cell helps cancel "reaction moments" which affect the accuracy of adhesion measurements. Further, Kumar, col. 5, ll. 61-63 discloses "[a]dhesion is determined by measuring the wheel friction force through the load cell and dividing it by the vertical load L." Thus, Kumar does not suggest measuring adhesion via a force applied between a yoke and frame (or in Kumar's invention, the force between a shaft and base plate), but rather by measuring the wheel friction force through its load cell. Applicants' claimed invention and Kumar's disclosed apparatus define fundamentally

different measurement arrangements and thus Applicants' claimed invention cannot be rendered obvious by Kumar's disclosure.

B. Rejection of Dependent Claims 2, 4, and 5

Applicants traverse the rejection of dependent **claims 2, 4, and 5**, which depend upon independent claim 1, for at least the same reasons set forth herein for claim 1. Further, with respect to amended claim 5, Kumar does not disclose a "processor, which stores first and second correction values resulting from respective first and second calibration steps and converts the measuring signal delivered by the force sensor into one or more material-specific tack values." Kumar does not disclose a processor capable of storing values or conducting computations as taught by Applicants. The Office Action cites Kumar, col. 4, ll. 62-68, and col. 5, ll. 1-8. However, the cited section does not make mention of a processor, a measuring signal, or a conversion or computation process. Rather the cited section addresses means of cancelling "reaction moments" that may create measurement error.

Applicants note, with appreciation the apparent non-obvious of the remaining pending claims (3 and 6-12) over the Kumar.

Applicants respectfully submit that the patent application is in condition for allowance. If, in the opinion of the Examiner, a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned attorney.

Respectfully submitted,



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